Unmanned Security Vehicle

STEM Sims

Lesson 2: Pollutant Source Interactions

A substance can interact with other substances in different ways. Sometimes the presence of one substance increases the impact of another substance, while other times it decreases its effects. Your task is to determine if two substances' effects are related. You'll analyze your data from Lesson 1 and look for an interaction.

Doing the Science

- You must have completed Lesson 1: Water Pollution Source to conduct this lesson. You'll need 1. your complete data set from Lesson 1 to run a correlation.
- 2. Write the name of the factor (temperature, oil, etc.) that you determined was the type of pollutant in Lesson 1 in the first row of Table under the column "Factor."
- 3. Choose one of the *other* factors (temperature, oil, etc.) that you believe might be related to the factor you listed in the previous step and write this factor in the first row of Table 1 under the column "Proposed Related Factor."
- 4. Copy and record in Table 1 below the data from each location for these two factors from Lesson 1.
- 5. Enter these data into a spreadsheet.
- 6. Run a correlation between these two factors to determine if the factors are related. A correlation close to +1 or -1 indicates a strong relationship between the factors. A correlation close to "0" suggests the two factors are *not* related. The Methods section of this module has a short video that shows you how to use a spreadsheet to calculate a correlation between two factors.

Location	Factor:	Proposed Related Factor:
1		
2		
3		
3		
4		
5		
6		
7		
8		
9		

Table 1.

Location	Factor:	Proposed Related Factor:
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		

Do You Understand?

- 1. What is the value of your calculated correlation coefficient?
- 2. Explain in words what the value of the correlation coefficient means, that is, state whether the relationship between the two factors is strong or weak.
- 3. Based on your answers to questions 1 and 2, do you think that the two factors you tested were related? Please explain your response.
- 4. Provide an explanation as to why the two factors were or were *not* related.